

c3 2. (Amended) an axle housing assembly according to claim 1, wherein said cover is detachably mounted on said body.

c3 4. (Twice Amended) An axle housing assembly according to claim 3, wherein said repulsive force receiving member is secured to one of said pair of axle brackets by a repulsive force receiving bolt so that said body is supported by the base frame through the brackets.

c4 7. (Twice Amended) An axle housing assembly comprising:
an axle housing having a differential housing and a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with a pair of axle tubes within said housing body;
support brackets for supporting said axle housing on a base frame;
a repulsive force receiving member extending generally vertically from the body of said differential housing for coupling the body of said differential housing integrally with at least one of said support brackets; and
a fastener extending through and securing together the repulsive force receiving member and said one support bracket.

REMARKS

Applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Status of the Claims

Claims 1-13 are currently pending in the present application. Each of the pending claims stands rejected. Claims 1, 2, 4 and 7 have been amended herein.

Rejections Under 35 U.S.C. § 112, ¶ 2

1. The Examiner has rejected claims 4-6 under 35 U.S.C. § 112 “as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.” Specifically, the Examiner has stated that it is “unclear what is meant by ‘integrally mounted on the base frame.’” Claim 4 has been amended to recite “said body is supported by the base frame through the brackets.” Applicants believe that this amendment to claim 4 should obviate the rejection under 35 U.S.C. § 112.

Since the rejection of claims 5 and 6 are based on the rejection of claim 4, applicants respectfully request that the rejection of claims 4-6 under 35 U.S.C. § 112 be withdrawn.

Rejections Under 35 U.S.C. § 102

2. Claims 1,3,4, 6-10, 12 and 13 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,644,955 to Yamamoto. Reconsideration is requested.

Claims 1 and 7, as amended, each now recite, “An axle housing assembly comprising: an axle housing having a differential housing and *a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with* a pair of axle tubes *within said housing body...*” See, for example, Figures 1 and 2 illustrating an integrally formed differential housing **22**, a repulsive-force receiving

member 48 (allowing attachment of the differential directly to an axle bracket), and a pair of axle tubes 24 within said housing body.

In the Office Action on pages 4 to 5, the Examiner acknowledged that locating a “repulsive force receiving member,” on the body (as now more particularly claimed), and not on the cover (as disclosed in Yamamoto), “patentably distinguish over Yamamoto.” Applicants agree. Accordingly, a withdrawal of the rejections of the claims over Yamamoto under §102(b) appears warranted.

Moreover, claim 7 and its dependent claims, require that the repulsive-force receiving member “extend generally vertically.” This limitation is not found in Yamamoto, where the force-receiving members extend predominantly “horizontally and transversely” (Yamamoto, Col. 3, line 2). Accordingly, Applicants traverse the rejection to the extent it applies to claims 7-13.

Since Yamamoto fails to disclose or suggest at least one element of amended claims 1 and 7, Applicants respectfully submit that this claim patentably distinguishes over Yamamoto.

Since dependent claims 3,4 and 6 and 8-10, 12 and 13 each depend either directly or indirectly on independent claims 1 or 7, they therefore incorporate each limitation of claims 1 or 7, respectively. Thus, claims 3, 4 and 6, 8-10, 12 and 13 are allowable over Yamamoto for the reasons stated above.

3. Claims 1-10, 12 and 13 have been rejected as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 863,604 to Herzog. Applicants respectfully traverse the rejection.

As noted above, claims 1 and 7, as amended, recite, “a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with a pair of axle tubes *within said housing body*...” As seen in Figures 1 and 2, the axle tubes are within the housing body and are not held in by the cover.

Herzog fails to disclose “an integrally formed” differential housing provided with axle tubes, as claimed. In Herzog, the equalizer casing 8 is “rigidly mounted on the beam... and being horizontally divided at a bolted joint securing the base and cover of the casing together.” See Herzog, p.1, lines 56-62. The axle tubes are not provided on or supported by an integrally formed housing. To the contrary, Herzog requires mating casing and cover components for that purpose.

The Examiner has taken the position that “the axle tubes are mounted to an integrally formed body-wherein the body is the bottom half of 8 only.” See Office Action, p.5, ¶ 13. If Herzog is to be interpreted in this way, it cannot anticipate the subject claims, because the axle tubes in Herzog are not “within said housing body” as required by the claims. Rather, the axle tubes are within neither the cover nor the casing. Herzog’s construction is clearly different from the claimed invention, in which the axle tubes are neither supported by nor within the cover. Thus, claims 1 and 7, as amended, cannot be anticipated by Herzog.

Rejections Based on 35 U.S.C. § 103

4. Claim 11 has been rejected under 35 U.S.C. § 103(a) “as being unpatentable over Yamamoto in view of Pegg.” Applicants respectfully traverse this rejection.

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by prior art.” MPEP § 2143.03 (citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).

Yamamoto discloses three distinct elements: the differential housing **23**, a differential carrier **24** and carrier cover **30** that must be combined in order to obtain a differential, mounted via axle brackets, to a base frame (vehicle). In Yamamoto, two repulsive force receiving members are disclosed, both of which attach to the carrier cover and *not* to the differential housing: “A differential carrier **24** and a carrier cover **30** are connected to the differential housing **23**, extending therefrom in the longitudinal direction of the vehicle. **Formed on the carrier cover 30 are a pair of horizontally and transversely extending arm portions 30a** positioned respectively above the corresponding arm positions **29a** of the front axle brackets **29**.” See Yamamoto, Col. 2, lines 66-67, Col. 3, lines 1-5. Thus, in Yamamoto, tolerance between the housing **23** and the cover **30** constitutes a further problem.

The Applicants’ invention allows direct rigid coupling between the differential body and an axle bracket via the repulsive force receiving member. Thus, the issue of tolerance is restricted to the relationship between the body, the axle tubes, and the support means (bracket) only, not the cover.

In sum, the structure of Applicants’ invention is distinguished in important respects from that disclosed in the Yamamoto reference.

Pegg discloses a fastener assembly for attachment of lightning resistant composite structures. See Pegg, Fig. 1. Pegg has nothing to do with the subject matter of the invention.

Indeed, Pegg is drawn from non-analogous art. No person skilled in the automotive or vehicular drive train art would turn to a field dealing with lightning resistant composite structures used in aircraft.

Moreover, the attempted combination of Yamamoto and Pegg fails to suggest the axle housing unit recited in amended claim 7, which has a pair of axle tubes within said housing body. Pegg does nothing to satisfy this deficiency.

5. Claim 11 also has been rejected under 35 U.S.C. § 103(a) “as being unpatentable over Herzog in view of Pegg.” Reconsideration is requested.

As discussed above, Herzog lacks a disclosure or suggestion of the axle housing recited in amended claim 7, since Herzog’s axle housing does not have an integrally formed differential housing with a pair of axle tubes within said housing body. Pegg does nothing to remedy this deficiency. Therefore, Applicants believe that this ground of rejection should be withdrawn.

CONCLUSION

For the foregoing reasons, it is believed that all of the claims as presently presented, are patentable, and that this application is now in allowable condition.

Respectfully submitted,
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Dated: November 5, 2001

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ATTACHMENT

1. (Three Times Amended) An axle housing assembly comprising:

an axle housing having a differential housing [with a body thereof] and a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with a pair of axle tubes within said housing body [mounted on said body, the body being integrally formed];

[a] support means adapted for mounting said axle housing to a base frame [for supporting said axle housing]; and .

a repulsive force receiving member provided on the body of said differential housing for coupling the body of said differential housing integrally with said support means.

2. (Amended) An axle housing assembly according to claim 1, wherein said [differential housing has a] cover is detachably mounted on said body.

4. (Twice Amended) An axle housing assembly according to claim 3, wherein said repulsive force receiving member is secured to one of said pair of axle[_]brackets , by a repulsive force receiving bolt so that said body is [integrally mounted on] supported by the base frame through the brackets.

7. (Twice Amended) An axle housing assembly comprising:

an axle housing having a differential housing [with a body thereof] and a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with a pair of axle tubes within said housing body [mounted on said body, the body being integrally formed];

support brackets for supporting said axle housing on a base frame;

a repulsive force receiving member extending generally vertically from the body of said differential housing for coupling the body of said differential housing integrally with at least one of said support brackets; and

a fastener extending through and securing together the repulsive force receiving member and said one support bracket.